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REVIEWS

RECENT SEISMOLOGICAL LITERATURE

EMILIO BÖSE. "Los temblores de Zanatepec, Oaxaca, a fines de septiembre de 1902" (The Earthquakes of Zanatepec, Oaxaca, at the end of September in 1902), *Paragones del Instituto Geológico de Mexico*, Vol. I, No. 1, 1903, pp. 1-19; pls. 1, 2.

EMILIO BÖSE. "A. Villafaña y Garcia y Garcia, El temblor del 14 de abril de 1907" (The Earthquake of April 14, 1907), *ibid.*, Vol. II, Nos. 4-6, pp. 135-258; 43 pls. and a table.

JOSÉ G. AGUILERA (Director). "Catalogo de los temblores (Macro-seismos) sentidos en la Republica Mexicana durante los años de 1904 a 1908" (Catalogue of the Earthquakes—Macro-seisms—Felt in the Mexican Republic during the Years 1904-8), *ibid.*, Vol. II, No. 10, pp. 389-467.

So soon as the Spanish-speaking peoples appreciate their opportunity in the direction of the investigation of earthquakes, it will be necessary for them to print the results of their researches in one of the better-known languages of sciences, or students of seismology must take up seriously the study of the Spanish language. Between northern Mexico and the southern extremity of the Andean System, is included one of the greatest earthquake provinces of the globe. The recent establishment by the Republic of Chili of a well-equipped seismological service, and the initiation by the Mexican government of an important serial publication largely devoted to earthquakes, may indicate that this time is not far distant. The new serial is issued by the Mexican Department of the Interior and apparently is a continuation under a new name and with slightly altered purpose of the *Anales del Secretaria de Fomento*, etc.

The report upon the Guerrero earthquake of 1897 is a valuable paper of 123 pages, 3 maps, 2 diagrams, and 38 halftone views showing ruined structures and broken ground within the area affected by the earthquake. The text treats in considerable detail of the topography and geology of the district, of the effects of the earthquake, of the character of the motion, and of the "foreshocks" and "aftershocks." Of very special value is a

list of the earlier earthquakes within the province, beginning with 1784. Seven pages are devoted to a list of data from instruments at foreign stations, and fifteen pages to a discussion (largely mathematical) of the depth of the earthquake centrum.

Seismologists will welcome the elaborate catalogue of Mexican earthquakes which is published in the last number of the series, with its earnest of further work along the same line.

HARRY FIELDING REID. "Seismological Notes," *Proc. Am. Philos. Soc.*, Vol. XLVIII, No. 192, 1909, pp. 303-12.

Under this somewhat unimpressive title Professor Reid has put forward an entirely new theory of the cause of earthquakes. In his own summary this theory is thus stated:

Tectonic earthquakes are caused by the gradual relative displacement of neighboring regions which sets up elastic strains so great that the rock is ruptured: and that at the same time of the rupture no displacements of large areas take place, but there occurs merely an elastic rebound, to an unstrained position, of the lips of the fault extending but a few miles on each side of it.

This theory is visualized for the reader by diagrams representing two short wooden blocks joined by a thick layer of stiff jelly which has been divided by a sharp knife into two equal layers. The blocks being held together under slight pressure, they are given a shearing motion. The jelly is thereby deformed much as would be a rubber layer, and the friction between the jelly surfaces is reduced by a release of the pressure upon the blocks. The two jelly layers now suddenly resume their former unstrained attitudes with the production of a fault of lateral displacement at their plane of junction. This fault is supposed to simulate in its manner of formation the recent displacement along the California rift, and the theory will command attention, particularly, since Professor Reid, as a member of the California State Earthquake Commission, has been intrusted with the problems of mechanics involved in the recent earthquake displacements, and has in preparation the second volume of the report of the commission.

The value of the theory will be adjudged differently by different workers, but it seems safe to say that its assumptions are far too sweeping and that the theory in its present form would never have been devised had the study of any save the California earthquake led to its framing. Of all known earthquakes which have been accompanied by visible displacements in the surface of the ground, this one is unique by reason of the large